

Embodied Carbon Disclosure: CALMAC® Ice Bank® Energy Storage Tank

TM65 North American Methodology, ASHRAE® and CIBSE 2024

Last Updated: October 2024; contact your account manager with questions. Please do not distribute without permission.



Results			
Life Cycle Stage	Results per-unit (kg CO2-eq)	Results per-kg product weight (kg CO2-eq)	Notes
A1. Material Extraction	1,448	1.59	Material emission factors sourced from TM65:2021 table 2.1 and TM65NA:2024 table 2.1. Greater than 95% of material composition accounted for.
A2. Transport to Factory	57.2	0.06	Calculated based on average transport distance from supplier to factory location. Transport emission factors from TM65NA: 2024 table 2.4.
A3. Manufacturing	287.7	0.32	Electricity Carbon Factor for RFCE eGRID region from TM65NA:2024 table 2.6. Gas carbon factors from TM65NA:2024 table 2.10. As per TM65NA:2024 table 2.5, assumed 2 rounds of manufacturing.
A4. Transport to Site	96.5	0.11	Calculation based on avg. transport distance to customer sites over past year. Transport emission factors from TM65NA: 2024 table 2.4.
B1. Use (Refrigerant Leakage During Product Life)	-	-	Not applicable, no refrigerant in product.
B3. Repair	20.5	0.02	Informed by multiple years of field data, repair rate is very low for product Value is 1% of A1-A4 + 1% of C2-C4.
C1. Deconstruction (Refrigerant Leak at End of Product Life)	-	-	Not applicable, no refrigerant in product.
C2. End of Life Transport	13.2	0.01	Per TM65NA:2024 Table 2.5, assumed transport of 100 km by truck. Transport emission factors from TM65NA: 2024 table 2.4.
C3. Waste Processing	143.9	0.16	Per TM65:2021 Table 4.7, assumed processing energy use equal to one round of manufacturing energy use from A3. Manufacturing.
C4. Disposal	0.4	0.0004	Assumed 99% of product is recycled, other materials sent to landfill. Sourced landfill emission factor from TM65NA:2024 table 2.13.
Embodied carbon without refrigerant leakage			
A1-C4 (excluding B1, C1)	2,067	2.27	
A1-C4 with buffer factor (excluding B1, C1)	2,688	2.96	1.3 buffer factor per TM65:2021
Refrigerant leakage only			
B1 + C1	-		
Total Embodied Carbon			
All life cycle stages, without buffer factor	2,067		
All life cycle stages, with buffer factor	2,688		

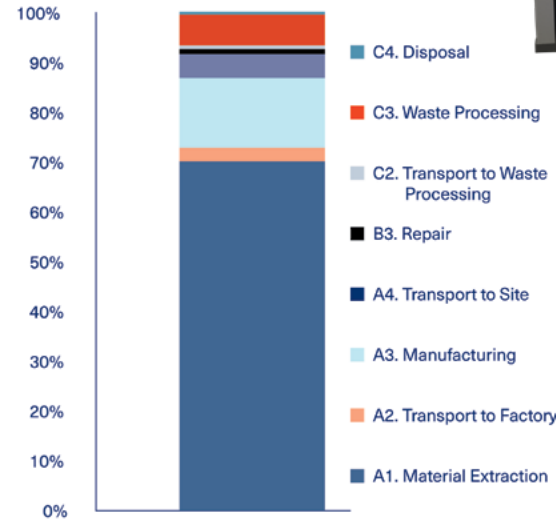
Product Details

Model: 1190 C

Unit Weight (*shipping weight unless otherwise specified*): 909 kg

TM65 Complexity Category: Category 2: Medium Complexity

Manufacturing Location: Fair Lawn, NJ



This calculation was performed for a selected unit configuration and size. It is reasonable to assume that the per-kg product weight results can be extrapolated to all sizes in the model range, using each unit's respective shipping weight, given similarities in raw materials, manufacturing, supply chain, and end of life.



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